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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/075,300 | 02/15/2002 | Stephen B. Pollard | 30006805-2 | 8976 |

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HEWLETT-PACKARD COMPANY
Intellectual Property Administration
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EXAMINER

JELINEK, BRIAN J

| ART UNIT | PAPER NUMBER |
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2615

DATE MAILED: 07/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/075,300

Applicant(s)

POLLARD ET AL.

Examiner

Brian Jelinek

Art Unit

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) 5-16, 20-22, 28-29, and 32-33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 17-19, 23-27, 30 and 31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2/15, 3/26.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

This is a first office action in response to application no. 10/075,300 filed on 2/15/2005 in which claims 1-33 are currently pending and claims 5-16, 20-22, 28-29, and 32-33 are withdrawn from consideration.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Election/Restrictions

Claims 5-16, 20-22, 28-29, and 32-33 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 4/25/2005.

The Applicant has elected the species drawn to Fig. 1. The Applicant has argued that "the difference between the first two species is apparently seen as being the shield in Fig. 4, and difference between the arrangement shown in Fig. 6, is seen being the use of two light sources".

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In response, the Examiner notes that species 1 comprises a light source out of the field of view of the camera, capturing a first image with the light source ON, and capturing a second image with the light source OFF, wherein the images are captured with the same exposure and the processor creates the final image by subtracting the second image from the first image. Species 2 comprises a light source in the field of view, capturing a first image with a short exposure time, and capturing a second image with a long exposure time, wherein the processor creates the final image by identifying and replacing pixels in the image. Finally, Species 3 comprises two light sources in the field of view, capturing a fully exposed first image with the first light source ON, capturing a second image with the same exposure and the second light source ON, and capturing a third image with the same exposure and no light source ON, wherein the processor creates the final image by subtracting the third image from the first and second images.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 17-19, 23-27, and 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Camus et al. (U.S. Pat. No. 6,021,210).

Regarding claim 1, Camus discloses a digital image capture apparatus configured to capture an image of an eye at least partially illuminated by ambient light, the apparatus comprising: an image capture device comprising a detector adapted to capture an image of the eye; an illumination source for illuminating said eye, a detector read-out circuit for capturing image data from said detector in response to a control signal; a controller for controlling said detector read-out circuit and said illumination source, wherein said controller provides a first control signal to said read-out circuit to capture a first image of said eye when illuminated by said illumination source at a first intensity and by said ambient light to produce a first image, and wherein said controller further provides a second control signal to said read-out circuit to capture a second image of said eye when said eye is illuminated by said illumination source at a second, lower, intensity and by said ambient light, said second, lower, intensity having a value greater than or equal to zero intensity but less than the first intensity; and a processor arranged to process said first captured image with said second captured image to produce a final image of said eye (col. 2, lines 17-28).

Camus further discloses ambient lighting can create bright and dark spots in an image, and removing these spots can be accomplished by image subtraction. Camus does not disclose capturing an image of a document. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to have used Camus's method of image subtraction in order to remove bright and light spots from images of documents, as well as from images of eyes, since it is well known in the art to remove specular reflections from images of reflective objects.

Regarding claim 2, Camus discloses the processor is arranged to combine said first captured image and said second captured image to form a final image by subtracting said second image from said first image (col. 1, lines 46-51). Furthermore, Camus shows an image captured without additional illumination (Fig. 6), and an image captured with additional illumination (Fig. 7). It is implicit that the first image and said second image are captured with the same exposure because the ambient lights appear with similar brightness in both images and the person is under exposed in Fig. 6. To further clarify, if the exposure of Fig. 6 was shorter, the image would be entirely dark and subtracting Fig. 6 from Fig. 7 would result in a final image without ambient correction (Fig. 7); and if the exposure of Fig. 7 was longer, the image would be uniformly bright and subtracting Fig. 6 from Fig. 7 would result in a final image that was completely dark.

Regarding claim 3, Official Notice is given that it is extremely well known in the art to pass a captured image through a low pass filter in order to smooth an image and reduce noise. As a result, it would have been obvious to one of ordinary skill in the art at the time of the invention to have included a low pass filter, and wherein at least one of said captured images is passed through said low pass filter prior to subtraction in order to smooth the image and reduce noise.

Regarding claim 4, Official Notice is given that it would have been obvious to one of ordinary skill in the art at the time of the invention to have applied the low pass filter only to the second image because a low pass filter smoothes the image, thus reducing its sharpness. As a result, it would have been obvious to one of ordinary skill in the art

at the time of the invention to have applied the low pass filter to the second image, comprising the ambient light source and not the subject (Fig. 6), in order to reduce noise in the image; and furthermore, it would have been obvious to one of ordinary skill in the art at the time of the invention to not apply the low pass filter to the first image, comprising the subject (Fig. 7), in order to avoid blurring the image of the subject.

Regarding claim 17, Camus discloses the image capture device comprises a digital camera (col. 4, lines 7-14).

Regarding claim 18, please see the rejection of claim 1.

Regarding claim 19, please see the rejection of claim 2.

Regarding claim 23, please see the rejection of claim 1.

Regarding claim 24, please see the rejection of claim 1.

Regarding claim 25, Camus discloses the plurality of images comprise an ambient light image which is captured when the eye is illuminated with ambient light (Fig. 6) and at least one illuminated image when the eye is additionally illuminated by the illumination source (Fig. 7).

Regarding claim 26, Camus shows the light source is arranged in a predetermined spatial relationship with the image capture device (Fig. 1).

Regarding claim 27, Camus discloses the illumination source comprise a single light source (Fig. 1, element 6).

Regarding claim 30, please see the rejection of claim 1.


Regarding claim 31, please see the rejection of claim 27.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Jelinek whose telephone number is (571) 272-7366. The examiner can normally be reached on M-F 9:00 am - 5:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached at (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Brian Jelinek
7/9/2005


DAVID L. OMETZ
PRIMARY EXAMINER